

IAP12 Rec'd PCT/PTO 04 MAY 2006

DOCKET: CU-4797

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: Seiji TAWAKAYA et al

TITLE: LIQUID CRYSTAL DISPLAY APPARATUS

THE COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, VA 22313-1450

**AMENDED ABSTRACT**

~~The main object of the present invention is to provide a~~ A liquid crystal display apparatus having a large displacement amount in a small load range, without generation ~~[[the]]~~ of gravity mura, ~~[[the]]~~ low temperature foaming, or the like as mentioned above, and also having a sufficient strength ~~[[also]]~~ against a local load; and furthermore, capable of constantly producing a gap between the transparent substrates. ~~In order to achieve the object, the present invention provides a~~ The liquid crystal display apparatus ~~comprising~~ has at least two sheets of transparent substrates, a liquid crystal layer sealed between the two sheets of transparent substrates, and a plurality of columnar spacers formed between the two sheets of transparent substrates, ~~for keeping the gap between the two sheets of transparent substrates at a specified gap, characterized in that the~~ The displacement amount between the 80 mN to 400 mN load is in a range of 0.1 mm to 0.8 mm, and the displacement amount between the 600 mN to 950 mN load is in a range of 0.05 mm to 0.5 mm at the time of applying a load ~~by the below mentioned measurement method in the direction so as to reduce the gap between the two sheets of transparent substrates to the display area of the transparent substrates.~~

(Measurement method)

~~The displacement amount against a load is measured by applying a load in the vertical direction to the transparent substrate surface with an indenter~~

having a 2 mmf plane at a 2.22 mN/sec applied load contacted with either of the transparent substrate side under a of 23°C condition.